11. A method as recited in claim 10, wherein said marking is performed by a radio station computer system, such as a broadcast automation system.

12. A method as recited in claim 11, wherein the audio stream of the radio station is digitized into packets bearing sequential serial numbers, and said marking of broadcast commercials by marking the start time and duration of the commercial identifies the audio packet serial numbers constituting the beginning and duration of the audio commercial to be replaced.

REMARKS

New claims 10-12 have been added to provide adequate coverage for applicants' contribution to the art.

New claim 10 sets forth in independent form the subject matter of original dependent claim 4. It defines a method for substituting replacement radio commercials in place of a plurality of broadcast radio commercials on an Internet radio program broadcast by a radio station to an Internet hosting service, comprising the steps of:

(a) generating a plurality of replacement radio commercials of various predetermined time lengths, whereby each replacement radio commercial has an associated time length and a commercial type;

(b) digitizing the replacement radio commercials and the associated time lengths;

(c) storing in an array the digitized replacement radio commercials, the associated time lengths, and the commercial types, the array being stored at an Internet service provider;

(d) maintaining user demographic information;

(e) marking each of the broadcast radio commercials with a digital marker by the radio station, the digital marker indicating the start and duration time of the broadcast radio commercial within the Internet radio program;

(f) transmitting the marked Internet radio program to the Internet hosting service;

(g) receiving of the marked Internet radio program by the Internet hosting service;

(h) examining of the marked Internet radio program by the Internet hosting service;

(i) detecting a digital marker of a commercial on the received Internet broadcast program;

(j) reading the duration time, of the commercial, from the detected digital marker;

(k) comparing the read duration time with the associated time lengths stored in the array;

(l) selecting from the array a digitized replacement radio commercial, the type of the replacement commercial matching the user demographic information and the replacement commercial having an associated time length equal to the read duration time;

(m) substituting the selected digitized replacement radio commercial in place of the broadcast commercial; and

(n) repeating steps (i) through (m) until the end of the Internet radio program,

whereby the listener of the Internet radio program receives an edited program having one or more replacement radio commercials substituted in place of the broadcast radio commercials.

New claim 11 depends from new claim 10. It sets forth the subject matter called for by original claim 4 with the limitation of original claim 2, and calls for the marking of the radio commercials to be performed by a radio station computer system, such as a broadcast automation system

New claim 12 depends from new claim 11, and recites the subject matter of original claim 4 as further limited by original claims 2 and 3. It calls for digitizing the audio stream of the radio station into packets bearing sequential serial numbers, and marking of broadcast commercials by

marking the start time and duration of the commercial to identify the audio packet serial numbers constituting the beginning and duration of the audio commercial to be replaced.

Support for new claims 10-12 may be found in the original specification, e.g. at page 2, line 22, through page 3, line 20; page 4, lines 10 through 24; page 8, line 8, through page 10, line 7.

Applicants' invention as recited in original claims 1-9 and new claims 10-12 provides a method and system for the delivery of broadcast radio programs via the Internet. Means are provided by which commercials present in the program material as originally generated at a radio station may be identified and replaced by substitute commercials inserted by an Internet hosting service. The Internet's bi-directional and individual connectivity allows selection and transmission of replacement commercials that are of particular interest or relevance to a particular user. Demographic information characterizing the user may be maintained and used as a basis for this selection.

The ability to individualize and tailor program content is advantageous for an advertiser, as it allows the advertiser to allocate an advertising budget in a prudent and highly effective manner. Products may be touted to those consumers whose interests, personal characteristics (age, gender, marital status, and the like), location, and other comparable demographic characteristics make them likely to buy that product. On the other hand, the system allows the advertiser not to waste resources in advertising products that a given user would likely not purchase or find appealing.

The replacement of advertisements is completely transparent to the user; such replacements are interposed solely at those points within the flow of program content which are preselected by the program director. Each user, whether listening via the Internet or by normal radio transmission, will hear and see advertising at the same point in the program, even though the advertising content to which different users are made privy is differentiated in accordance with user profile, thereby causing different users to hear different advertising content.

Claims 1 – 9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over and U.S. Patent No. 5,917,830 to Chen et al. in view of U.S. Patent No. 6,094,677 to Capek et al.

Chen et al. discloses a method and apparatus for splicing a secondary packetized data stream, such as a commercial, with a primary packetized data stream, such as a network television program.

With respect to claims 1 and 7, the Examiner has indicated that Chen et al. discloses a system and method for substituting advertisements during a broadcast, comprising:

a. Generating, digitizing, and storing a plurality of replacement commercials for insertion into the broadcast;

b. Marking the broadcast with start and stop times of the commercial;

c. Receiving the broadcast;

d. Detecting and reading the insertion marker on the broadcast;

e. Selecting and substituting (inserting) a replacement commercial into the broadcast at a point corresponding to the insertion marker; and

f. Repeating the detection and insertion of replacement commercials throughout the broadcast.

The Examiner has indicated that Chen et al. does not disclose a comparison made to determine whether the duration of the replacement commercial corresponds to the duration of the main commercial being replaced. For that teaching, the Examiner has cited Capek et al.

Capek et al. discloses methods, apparatuses and computer program products that provide information to a user during delays in retrieving program material with an interactive system connected to a network. The information provided to the user is referred to as an insertion, since it is inserted into the normal stream of user requested data. The Capek et al. method makes use of delays attendant to the vagaries of a network such as the Internet to provide the user with an

insertion containing information which may be customized to either the user or the program material requested, or both. It is said that an expected length of delay for the receipt of the user requested data can be made and used as the basis for deciding whether or not to make an insertion. Several means are suggested for determining whether the delay is sufficiently long for an insertion, including a perceived actual delay, historical knowledge of delays based on factors such as the time of day, location of the requested program material, and network management information regarding the congestion or traffic within the network. If made, the insertion may continue either until the requested material is received or for a predefined period of time. Capek et al. further discloses that while the insertion is being presented, the retrieved program material may be cached as it is being received. Significantly, Capek et al. does not contemplate the replacement of actual program content by substitute content, such as the substitution of replacement commercials for already extant broadcast radio commercials. Instead, Capek et al. merely contemplates addition of material inserted in gaps in the data stream being received. As such, practice of the Capek et al. teaching inevitably extends the length of a total program content. Such extension is clearly incompatible with radio broadcasting, which conventionally comprises on-going programming including segments of defined length and scheduling.

Furthermore, Capek et al. does not contemplate the use of programming content as a consideration in determining when or if an insertion is to be made. Rather, the determination is made based on an essentially random basis, i.e., the status of the Internet. Clearly, with the Capek et al. system, neither the originator of the programming content (the program director) nor the user/consumer have control. By way of contrast, applicants' invention as recited in claims 1-12, calls for replacement of already extant commercials. As such, replacements are made solely at those points in the on-going program content which are under the control of the originating radio station.

As recognized by the Examiner, Chen et al. method makes no comparison between the durations of the replacement commercial and the main stream commercial, which comparison is

required, step (j) of applicants' claim 1. The Examiner has indicated that based on the Capek et al. patent, it would be obvious to one skilled in the art to compare the durations of the main stream commercial and the replacement commercial when selecting the commercial in the Chen et al. invention, in order to decrease the likelihood of "blank time" during reception of the broadcast if the replacement commercial were shorter than the main commercial or "overwriting" of the main stream broadcast content if the replacement commercial was longer.

It is respectfully submitted that the combined teachings of the Chen et al. and Capek et al. references do not disclose or suggest the method delineated by present claims 1-9. Rather, any method practiced in light of the combined teachings of the cited references must include the Capek et al. insertion step. That insertion step would trigger insertion of commercials at random times. The disastrous results caused by insertion of commercials at inopportune times throughout the program would offend the user and discourage advertising support.

More specifically, the determinations of time made in Capek et al. are inferential and carry no reasonable expectation of certainty. The determination of whether or not to insert is said to be "based on a variety of factors" (column 9, line 67). The lack of certainty is further revealed by use of such words or phrases in Capek et al. as "expected delay" (column 10, line 12), "estimation" (column 10, line 21), and "approximately the same time" (column 10, line 25) (emphases added). The Examiner has identified the potential for blank time or overwriting if the main stream commercial and its replacement are not of equal duration. On the other hand, the method required by present claim 1 assures selection of a replacement commercial equal in length to the original commercial. In particular, the duration time determined according to step (i) of claim 1 provides a time certain whereby the selection called for by step (k) can be accomplished.

In addition, in any method practiced in view of the Chen et al. and Capek et al. teachings, the determination of duration for a replacement commercial is based on the status of the Internet. This criteria makes the determination of replacement commercial duration subject to random events

outside the control of the Internet radio program broadcast by a radio station. As previously noted, such random airing of commercials would create a negative impression on users that would likely discourage advertising support. In contrast to any method disclosed by the combined teachings of Chen et al. and Capek et al., the method called for by present claims 1-9 (as well as new claims 10-12) effects insertion of replacement commercials solely at those points in the on-going program content which are under the control of the originating radio station.

Further, applica... ...mit that the combination of Capek et al. with Chen et al. suggests the propriety or desirability of inserting commercials at any point during the transmission of programmatic material based on the random, often chaotic status of the Internet, rather than at times during the course of a program that are intentionally chosen by the originator of an Internet radio program broadcast by a radio station. Creators of broadcast program content generally schedule commercial breaks with great care, based on aesthetic or programmatic considerations. For example, a producer might select a group of songs to be performed sequentially or a single extended musical work and expect the material to be carried without interruption. Similarly, it would be expected that a given scene that is part of a dramatic stage play would not be interrupted. A commercial would not be appropriate at a critical juncture in a sports event. Scheduling of commercials also entails legitimate business concerns. The sale of advertising is a business transaction between an advertiser and either a commercial broadcaster or an Internet provider. In either case, the contractual relationship likely includes scheduling considerations. Highly undesirable intrusions by an inserted commercial would inevitably occur in any system based on the combined teachings of Chen et al. and Capek et al. Advertisers would be highly averse to possibility that their wares might be tainted in the marketplace if touted at an inadvertent or inopportune time, contingent on the vagaries of the Internet not under their control.

Fourth, the number of inserted commercials and their durations are not predictable in a system based on the combined teachings of Chen et al. and Capek et al. The insertion aspect of the

Capek et al. disclosure suggests that insertions may be made if the status of the Internet causes delays in downloading material requested. A conventional broadcasting schedule includes advertisements, the number and duration of which are pre-determined by the originating radio station. The method recited by applicants' claims 1-9 enables the advertiser and the Internet service provider to predict virtually to a certainty the number and duration of replacement advertisements. This level of expectation and predictability facilitates contractual arrangement for advertising support. Contractual certainty is readily established, since the number and duration of advertising segments, and hence the value of advertising time conveyed can be precisely defined. A method based on the combined teaching of Chen et al. and Capek et al. of lacks such predictability, because the number and duration of commercials to be inserted is not determinable a priori.

Accordingly, it is respectfully submitted that the method and system called for by present claims 1 and 7 is not rendered obvious by the combination of Chen et al. and Capek et al.

With respect to claim 2, the Examiner has indicated that Chen et al. discloses the marking of start and end times of the insertion point by the broadcast station. As discussed hereinabove in connection with the rejection of claims 1 and 7, the combination of Chen et al. and Capek et al. suggests random, not controlled insertion of replacement commercials. Applicants thus respectfully submit that any disclosure by Chen et al. concerning marking of start and stop times by a broadcast station does not cure the lack of suggestion in the reference concerning the combination of features required by claim 2, which depends from claim 1 and requires each of the claim 1 limitations.

With respect to claim 3, the Examiner has pointed to disclosures in both Chen et al. and Capek et al. that an audio stream can be digitized to allow for presenting a series of packets in the proper order as one complete commercial. As discussed hereinabove in connection with claims 1, 2, and 7, applicants submit that the combination of Chen et al. and Capek et al. lacks disclosure of the combination of features required by independent claim 1, from which claim 3 depends. The

particular citations regarding digitization that the Examiner has identified do not address these deficiencies. It is therefore submitted that present claim 3 patentably defines over the art applied.

With respect to claims 4-6, 8, and 9, the Examiner has pointed to Capek et al.'s disclosure of customizing the information to be inserted into the program material.

As recognized by the Examiner, Chen et al. does not explicitly disclose using customer demographics in the selection of a replacement commercial. Applicants submit that the Chen et al. method inherently cannot use individualized customer demographics in the selection, because Chen et al. discloses no means by which such demographic information can be conveyed, and it discloses no means by way of which such information, even if available, could be used in the process of making the selection called for either by step (k) of applicants' claim 1, as further defined by each of dependent claims 4-6, or by step (d) of claim 7, as further defined by each of dependent claims 8 and 9. Even less does the Chen et al. disclosure contemplate any mechanism by which the replacement can be customized for each individual recipient of the modified content. By way of contrast, the bi-directional and individualized connectivity of the Internet provides means that enable this customization to be accomplished in the form recited by claims 4-6, 8, and 9. That is to say, the present, Internet-based system and method recited by claims 4-6, 8, and 9 affords the delivery of program content, including commercials that may be specifically targeted for each and every user of the system. Such targeted delivery capability, as well as the desirability thereof, is completely absent from the Chen et al. teaching. In particular, the Chen et al. teaching is described as being particularly suitable for use at a cable system headend. By its very nature, a cable system provides identical program content to each of its subscribers. While the plural subscribers generally are located in a particular geographical area and so may share certain demographic characteristics, others, such as gender, are highly unlikely to be identical even within a very small area. Whereas the Chen et al. disclosure does not address this limitation, the bi-directional and individual

connectivity of the Internet allow a system constructed according to claims 1-9 to provide targeted commercial segments having completely individualized content.

As discussed hereinabove in connection with the rejection of claims 1 and 7, applicants respectfully submit that when combining Chen et al. and Capek et al, the totality of the resultant disclosure must be considered. While the Capek et al. patent suggests insertions that may be customized to a user, it also suggests additional features – that the insertions are trigged by random events -- which teach away from the invention, defined by applicants' claims. It is accordingly submitted that modifying Chen et al. in light of Capek et al. does not fairly disclose or suggest the invention recited by present claims 4-6, 8, and 9. When compared to any method practiced in light of the combined teachings of the cited references, the method called for by present claims 1-9 effects insertion of targeted advertising in a more controlled, predictable and tasteful manner, thereby facilitating consummation of contractual arrangements. In addition, the method of applicants' claims provides for more satisfactory listening and viewing experiences, thereby presenting a program format far more likely to attract advertising revenue. These significant advantages are submitted to provide adequate basis for predicating patentability of claims 1-9, as well as new claims 10-12 over the cited references.

Accordingly, reconsideration of the rejection of claims 1 – 9 under 35 U.S.C. §103(a) as being unpatentable over the combination of Chen et al. and Capek et al. is respectfully requested

In view of the remarks set forth above, it is submitted that the present application is in allowable condition. Reconsideration of the rejection of claims 1 - 9 and their allowance, together with new claims 10-12 are, therefore, earnestly solicited.

Respectfully submitted,
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CLAIMS

What is claimed is:

1. A method for substituting replacement radio commercials in place of a plurality of broadcast radio commercials on an Internet radio program broadcast by a radio station to an Internet hosting service, comprising the steps of:

(a) generating a plurality of replacement radio commercials of various predetermined time lengths, whereby each replacement radio commercial has an associated time length;

(b) digitizing said replacement radio commercials and said associated time lengths;

(c) storing in an array said digitized replacement radio commercials and said associated time lengths, said array stored at an Internet service provider;

(d) marking each of said broadcast radio commercials with a digital marker by said radio station, said digital marker indicating the start and duration time of said broadcast radio commercial within said Internet radio program;

(e) transmitting said marked Internet radio program to said Internet hosting service;

(f) receiving of said marked Internet radio program by said Internet hosting service;

(g) examining of said marked Internet radio program by said Internet hosting service;

(h) detecting a digital marker of a commercial on said received Internet broadcast program;

(i) reading the duration time, of said commercial, from said detected digital marker;

(j) comparing said read duration time with said associated time lengths stored in said array;

(k) selecting from said array a digitized replacement radio commercial having an associated time length equal to said read duration time;

(l) substituting said selected digitized replacement radio commercial in place of said broadcast commercial; and

(m) repeating steps (h) through (l) until the end of said Internet radio program, whereby the listener of said Internet radio program receives an edited program having one or more replacement radio commercials substituted in place of said broadcast radio commercials.

2. A method as recited in claim 1 wherein said marking is performed by a radio station computer system, such as a broadcast automation system.

3. A method as recited in claim 2 wherein the audio stream of the radio station is digitized into packets bearing sequential serial numbers, and said marking of broadcast commercials by marking the start time and duration of the commercial identifies the audio packet serial numbers constituting the beginning and duration of the audio commercial to be replaced.

4. A method as recited in claim 1 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial type for selecting a commercial targeted to said user.

5. A method as recited in claim 2 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial type for selecting a commercial targeted to said user.

6. A method as recited in claim 3 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial type for selecting a commercial targeted to said user.

7. A system for substituting broadcast commercials of an Internet radio program, with replacement commercials, comprising:

(a) radio station means for marking said broadcast commercials of said Internet radio program with a mark, said mark indicating the start and time duration of said broadcast commercial;

(b) input server means for receiving said marked Internet radio program by an Internet hosting service;

(c) commercial storage means of said Internet hosting service for storing a plurality of digitized radio commercials;

(d) central processor means for selecting one of said digitized radio commercials from said commercial storage means;

(e) marker decoder means for decoding said mark, said mark being supplied to said central processor;

(f) central processor mixing means for generating an edited radio program by substituting said selected digitized radio commercial in place of said broadcast commercial; and

(g) output server means for transmitting said edited radio program to a user.

8. A system as recited by claim 7 wherein said commercial storage means further stores commercial type.

9. A system as recited by claim 7 further comprising user profile storage means for storing individual user ID and user demographics, whereby said central processor employs said user ID to match said user demographics to said commercial type for selecting a commercial targeted to said user.